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BEES FROM ERITREA, NORTHWEST AFRICA

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In 1930, Mr. H. Compere collected a few species of bees in Eritrea, and through the kindness of Mr. P. H. Timberlake these have been handed to me for study. All the species, including the holotypes, will be found in the American Museum.

Anthophora bipartita comperei, new subspecies

FEMALE.—Length about 16 mm.; exactly like *A. bipartita* Smith, with the anterior part of thorax above black-haired, but the very rugose clypeus entirely black, with a strong median keel on upper half.

Nefasit, April 16. This is entirely parallel with *A. nigroclypeata* (Friese), which is a similar black-faced form related to *A. flavicollis* Gerstaecker. True *A. bipartita* comes as far north as Nairobi.

Trigona beccarii Gribodo

Six from Martini's Concession, March 23. They were found on orange blossoms.

Trigona bottegoi Magretti

Six from Martini's Concession, March 23. Found on orange blossoms.

Ceratina citriphila, new species

FEMALE.—Length about 7 mm.; robust, dark greenish-blue, including tubercles, but disc of mesothorax black; flagellum dusky reddish beneath except at base; clypeus with a very broad dull yellow longitudinal band, somewhat broadened below, but with only traces of lateral extensions; head and thorax densely and strongly punctured, the disc of mesothorax dull in middle, with punctures running in lines, but there is a pair of shining bands, on which are few punctures; prothorax with a slender fringe of white tomentum; scutellum with a shining dot in middle, but no line; axillae briefly spined; tegulae very small, shining black; wings brownish hyaline, stigma dark reddish; legs mainly black, but front femora green, front tibiae with a cream-colored stripe on basal half, hind tibiae with the basal half creamy white on outer side, hind basitarsi dull whitish on outer side; abdomen strongly punctured, tergites not ciliate; last tergite very rugose, with a subapical elongate pit; sternites shining blue with black margins.

Two specimens from Martini's Concession, March 23, on orange blossoms.

In the series of females with dark tubercles (without the light spot), and having the hind tibiae with a large light mark, this species falls as follows.

1.—Disc of mesothorax green; hind basitarsi with a pale mark; clypeal mark yellowish white, with long lateral extensions (Belgian Congo)... *albopicta* Cockerell.
Disc of mesothorax blue; blue species with spined axillae; hind basitarsi with no pale mark..... *pileifera* Cockerell, variety.
Disc of mesothorax black..... 2.
2.—Abdomen rich purple-blue (S. W. Africa)..... *turneri* Cockerell.
Abdomen not so colored..... 3.
3.—Abdomen olive green, with brassy tints; wings dusky; hind basitarsi all black. *viridifrons* Cockerell, variety.
Abdomen bluish green to steel blue..... 4.
4.—Stigma pale dull brown; wings grayish; hind basitarsi dark; scutellum with a smooth band in middle (Pemba Island)..... *pembana* Cockerell.
Larger (about 7.5 mm.) and blue instead of green; clypeal mark very broad, with lateral extensions at lower end; wings and stigma darker.. *pileifera* Cockerell.
Very like the last, but greenish; clypeal mark without distinct lateral extensions, and much narrower at upper end..... *citriphila*, n. sp.

C. pileifera (described in a paper awaiting publication) is variable, or perhaps composite. The types (both sexes) come from Beira, Portuguese East Africa (A. Mackie, J. Ogilvie), but other specimens, showing variation, are from Tanganyika Territory and the Belgian Congo. *C. citriphila* is a darker and different looking insect, and must, I think, be treated as a different species. It resembles *C. fastigiata* Fox, but is easily separated by the dark tubercles.

Allodape taita Strand

FEMALE.—Length about 7 mm., anterior wing about 4; shining black, with clypeal mark (but no lateral marks) and tubercles cream-color; tegulae hyaline; wings hyaline, iridescent, with very large dark brown stigma and dark nervures; eyes dark red; mandibles black; upper part of clypeus pale yellow right across, the yellow here forming a quadrate area about twice as broad as long; the lower part of the clypeus has a central band, the whole mark with the outline of a mallet; antennae black, the flagellum faintly brownish beneath; a little semicircular white mark on second antennal joint, and extremely small marks on end of scape and on third joint, or all these white marks may be absent; ocelli red; mesothorax highly polished; second cubital cell receiving recurrent nervures about equally distant from end; legs black, with small joints of tarsi light red; spurs yellowish white; abdomen with the basal half shining, the apical half dull, tergites 4 and 5 with linear pallid margins.

Two specimens from Martini's Concession, March 23, on orange blossoms.

In Strand's table (1914) this runs to *A. taita* Strand, which is about 6 mm. long. The description agrees so well with our insect that I feel confident that the identification is correct. *A. taita* is recorded from various localities of East Africa.

Allodape citrifloris, new species

FEMALE.—Length, 4 mm.; black, with the clypeus yellowish white, the light area constricted in middle; no lateral marks; labrum, spot on base of mandibles, scape in front, and tubercles, all yellowish white; flagellum dark reddish beneath; mesothorax highly polished; tegulae pale testaceous, and wing-base conspicuously pale, with a white dot; wings clear hyaline, with a very large reddish-brown stigma, and pale nervures; second cubital cell short, quadrate, receiving second recurrent nervure far from end; first recurrent joining first cubital cell a short distance from end (on one side there is an abnormal, oblique nervure crossing first discoidal cell); trochanters and femora black, tibiae and tarsi pale red; abdomen shining, obscurely brownish, tergites 3 to 5 with pallid margins. The hind tibiae are somewhat dusky.

One specimen from Martini's Concession, March 23, on orange blossoms.

In Strand's table (1914) this runs to *A. pembana* Strand, agreeing in the small size, but differing in the venation and the pallid tibiae. In Friese's table (1924) it comes nearest to *A. albitarsis* Friese, described from Eritrea, but that species has the tibiae black, brown at end.

Allodape comperei, new species

FEMALE.—Similar to the last, but 4.75 mm. long; lateral constrictions of light clypeal area very shallow; first recurrent nervure joining second cubital cell very near base, second very far from apex; labrum and base of mandibles dark. The tibiae and tarsi are chestnut red, and the long ample wings are very faintly brownish.

One specimen from Martini's Concession, March 23, on orange blossoms.

Near to *A. pembana* Strand, from Pemba Island, but larger, the wings 3. 9 mm. long (3 mm. in *C. pembana*), and the scape has a white stripe in front (all black in *pembana*), and the red tibiae also at once distinguish it. In Friese's table (1924) it runs to *A. bouyssoui* Vachal, from the French Congo and Angola, but that has rufotestaceous mandibles. The intercubital and recurrent nervures are practically colorless. The mandibles have a brown band across the middle, and the labrum is obscurely brownish. The area of metathorax is microscopically transversely lineolate.

As there is no key to Vachal's African *Allodape*, I made one from the descriptions. In no case is the abdomen red.

1.—Without yellow markings ..... 2.
Marked with yellow ..... 4.
2.—Entire clypeus (female) reddish; length, 6.5 mm. (Belgian Congo) ..... *neavei.*
Clypeus not reddish (females) ..... 3.
3.—Tegulae red; length, 4.5 mm. ..... *pulla.*
Tegulae hyaline; length, 6.5 mm. (Delagoa Bay) ..... *vitrea.*
4.—Larger; 6.5 mm. or over; females ..... 5.
Smaller; 6 mm. or less ..... 6.
5.—A broad interrupted line in middle of clypeus; length, 6.5–8 mm. (French Congo) ..... *interrupta.*
(If pronotum and tubercles yellow, from Sierra Leone, var. *collaris.*)
Clypeus with a T in yellow; length, 6.5–7 mm. (French Congo and Belgian Congo) ..... *nigricollis.*
6.—Males ..... 7.
Females ..... 8.
7.—Entire clypeus yellow; tarsi yellow; length, 4.5–6 mm. (French Congo) ..... *ictis.*
Clypeus marked with yellow; length, 6 mm ..... *interrupta.*
8.—Legs almost entirely rufotestaceous; length, 5–5.5 mm. (French Congo and Angola) ..... *bouyssoui.*
Legs not so colored ..... 9.
9.—Clypeus with a thick yellow T; tubercles yellow; length, 5 mm. (Lumbwa, Kenya, alt. 6340 ft.) ..... *leptozonia.*
Clypeus with a yellow T on a shuttle; labrum yellow; length, 4.5 mm. (French Congo) ..... *rolini.*
Clypeal mark narrowed above; tubercles yellow; length, 4.5–6 mm. ..... *ictis.*

Halictus simulator, new species

FEMALE.—Length about 8 mm., anterior wing 6; black, including mandibles, antennae (apical part of flagellum very faintly brownish beneath), and tegulae; pubescence white; wings hyaline and iridescent, the large stigma dark reddish, nervures mostly light brown, basal nervure black; face rather narrow; clypeus moderately produced, shining, with strong irregular punctures, and a subapical median pit; supraclypeal area convex and polished; front dull; face with thin dull white hair; cheeks broad, with white hair; mesothorax dull, with a median depression, on each side of which it is slightly shining; tubercles with a grayish-white fringe; scutellum with two shining bosses, and a dull interval between; area of metathorax semilunar, with dense strong rather wrinkled plicae; sides of posterior truncation not sharply defined; postscutellum with much white tomentum, and a line of white hair on each side behind axillary region; basal nervure falling some distance short of nervulus; second cubital cell very large, quadrate, somewhat broader than high, receiving the first recurrent nervure very near the apical corner; third cubital cell not or hardly wider than second, the outer nervure pale; legs black, the tarsi red at extreme tip, a little red brush at end of hind basitarsi; hind tibial spur with short oblique sawlike teeth; abdomen broad, moderately shining, the first tergite microscopically, very densely, lineolate and tessellate; tergites with entire rather dull white basal hair-bands, and their margins not discolored.

Two specimens from Nefasit, April 12 (type) and May 15.

Halictus farquhari Cockerell, from Natal, is separated by the red middle and hind tarsi, but the two species are almost exactly alike, and I should think the one from Eritrea a local race, were the locality not so remote.

Halictus nefasiticus, new species

FEMALE.—Length a little over 9 mm., anterior wing 7.3; rather slender, with somewhat the aspect of a male; head and thorax black, including mandibles, but flagellum brown beneath, becoming light red apically; tegulae very dark brown, with traces of very minute punctures; hair of head and thorax abundant and erect, the general effect pale gray, on lower part of mesopleura clear white, on vertex light brown, and partly brown on scutellum, though not on mesothorax; face very broad, inner orbits concave; clypeus dull, finely punctured, obtusely ridged across the middle, with a rather large, shining, round apical pit; mesothorax entirely dull, not depressed in middle; scutellum dull, but the surface is hidden by long hair; metathorax densely hairy except the basal area, which is dull and granular, with weak plicae at base; wings clear hyaline, stigma and nervures light red; basal nervure strongly arched, falling a little short of nervulus; outer nervures pale but not weakened; second cubital cell broad, the lower apical corner somewhat produced, the first recurrent nervure received a moderate distance before the end; third cubital cell, in its widest part, conspicuously broader than second; legs black, with mostly pale hair; hind femora mainly pale reddish, with a very large white scopa; hind tibiae with long curled pure white hair in front, short dark brown hair behind; spurs very pale; hind tibial spur appearing simple, but with a very small low lamina near base, the margin beyond minutely spinulose; abdomen without hair-bands; first two tergites light rufotestaceous, each with a transverse, sharply defined, blackish band; broad apical margins of second and third tergites pallid, of fourth more narrowly so; third tergite with a broad black band before the pale margin, and a pyramidal blackish shade in middle, but otherwise light rufotestaceous; apical part of abdomen black; fifth tergite with a deep apical furrow, extending halfway to base, and bordered by short brown tomentum; venter testaceous basally, apically black; sixth tergite directed forward, at right angles to fifth.

Nefasit, May 15, one specimen.

Related to *H. burunganus* Cockerell, from Burunga, Belgian Congo. That species has the first two tergites similarly colored and marked, but is more robust with rather shining scutellum, flagellum chestnut red beneath, and shorter, yellowish wings.

The following key separates it from related females.

1.—Larger and more robust; anterior wing nearly 9 mm.; black band on first tergite enlarged and extending basad at sides. (Burunga, Belgian Congo, J. Bequaert)..... *burungensis* Cockerell.

Smaller and less robust; anterior wing about or a little over 7 mm.; black transverse band on first tergite not enlarged at sides.....2.

2.—Black band on first tergite much broader than the marginal region beyond it; first two tergites with broad apical orange bands.
partitus Cockerell (Cape Province).
Black band on first tergite not broader than the marginal area beyond it.....3.
3.—Narrow species; tergites 1 to 4 with opaque light yellow marginal bands.
perpansus Cockerell (Natal).
Tergites without such bands.....4.
4.—Abdomen broader, third tergite red or pale only at base..*burunganus* Cockerell.
Abdomen narrower, third tergite half pale red.....*nefasiticus*, n. sp.

It can be said of this bee-fauna, as shown by Mr. Compere's collection, that it is entirely Ethiopian in character, with no Palaearctic elements. Also, it has no affinity with the desert fauna of Sudan and Arabia. It may be added that the flora of Eritrea includes, as characteristic genera, *Hyphaene* (palm), *Ficus*, *Albizzia*, *Acacia*, *Bauhinia*, *Cassia*, *Dalbergia*, *Combretum*, *Adansonia*, *Sterculia*, *Strychnos*, and *Sideroxylon*, a characteristically African assemblage.